

3. Facilities Proposed

The proposed operation will be on channel 292 A (106.3 MHz) with an effective radiated power of 1.94 kilowatts. Operation is proposed with a 4 element circularly polarized omni-directional antenna, side-mounted on a uniform cross-section guyed tower to be constructed at a site located 3.7 kilometers southwest of central Kalispell. K18AJ, a television translator owned by KNAX(TV) currently operates from another tower at this site. When construction is complete, K18AJ will move to the proposed tower and the existing tower will be removed.

a. NIER Calculations

Study of the area within 1000 meters of the proposed site reveals no likely sources of non-ionizing radiation other than those mentioned above. Thus, the ground level NIER values near the base of the proposed structure are believed to be negligible. Precise calculations are made only with regard to the levels from this proposal and the translator.

The power density calculations shown below were made using the techniques outlined in the EPA report titled: *An Engineering Assessment of the Potential Impact of Federal Radiation Protection Guidance on the AM, FM, and TV Broadcast Services* (Gailey & Tell, April, 1985). All calculations contained herein are based on the measured element patterns for the antenna, and follow the procedure shown in the Gailey and Tell report. The patterns were identified by applying the procedure outlined in the report to the measurement data contained in the report titled: *Element Pattern Measurements on FM Antennas* (EPA-520/ 6-85-107, June 1985).

Hatfield & Dawson Consulting Engineers

"Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. Equation #1, contained in the Gailey & Tell report and shown below, was used to calculate the ground level power density figures from each antenna at incremental distances from the base of its supporting tower.

$$S(\mu\text{W}/\text{cm}^2) = \frac{(\text{Adjusted ERP in Watts}) \times 1.64 \times 2.56 \times 100}{4 \times \pi \times (\text{Distance})^2}$$

Where: Adjusted ERP in Watts is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

Distance = Distance in meters from the center of radiation to the calculation point.

Calculations of the power density produced by the proposed antenna system assume a Type 3 element pattern, which is the element pattern for the ERI antenna which the applicant proposes to use. Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 1000 meters. Values past this point are increasingly negligible.

The highest calculated ground level power density occurs at a distance of 34 meters from the base of the antenna support structure. At this point the power density is calculated to be 1.9 $\mu\text{W}/\text{cm}^2$, 0.19% of the ANSI standard.

"Worst-case" calculations of the power density produced by the antenna system of the translator operation authorized in their construction permit, BPTT-8800624VY, assume a

Type 2 element pattern, which is the element pattern for the UHF antenna which is used by K18AJ. The highest calculated ground level power density occurs at a distance of 21 meters from the base of the antenna support structure. At this point the power density is calculated to be $5.8 \mu\text{W}/\text{cm}^2$, 0.35% of the ANSI standard at the appropriate frequency.

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation and the "worst-case" operation of the translator is less than 1% of the ANSI standard.

The site is located in a rural area and public access is restricted by a gate. The antenna tower will be fenced and posted with warning signs and all station personnel and contractors will be required to follow appropriate safety procedures before any work is commenced on the antenna tower.

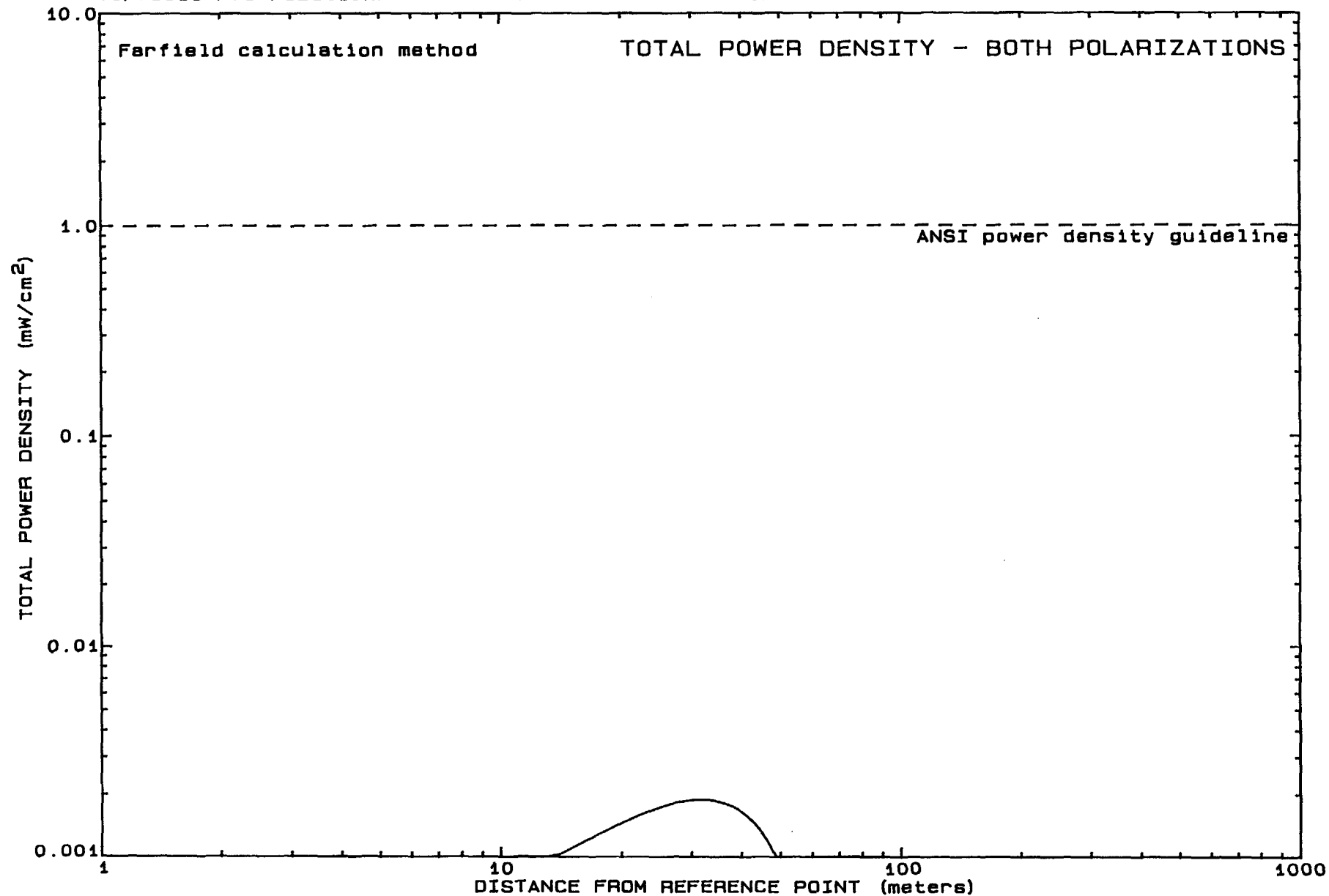
b. Blanketing Contour

The 115 dbu contour for the proposed facilities extends 549 meters from the tower, based on the calculation methodology shown in §73.318 of the Commission's Rules. Much of the area within the blanketing contour is unpopulated. The height of the proposed antenna above ground and its vertical radiation characteristics should mitigate any adverse effects to nearby residents or other communications facilities. If such adverse effects occur, the applicant will be responsible for their amelioration as prescribed in §73.318, including receiver-induced intermodulation to facilities in existence or authorized

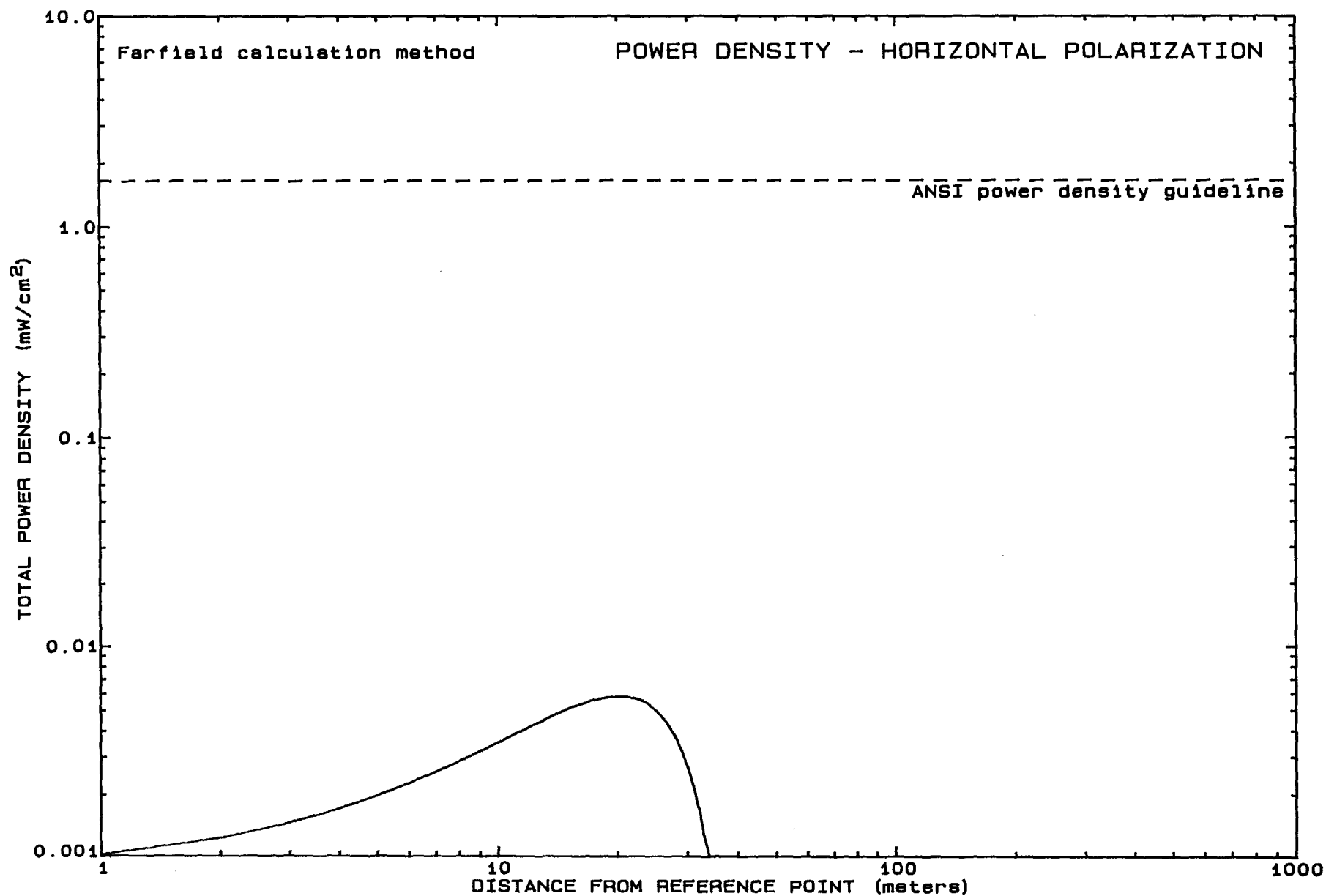
or receivers in use prior to grant of this application as noted in Form 301, Section VB,
Paragraph 14.

Station: PROP Frequency: 106.300 MHz Height of Observer (ARP): 2.0 Meters

	<u>No. of Elements</u>	<u>Element Type</u>	<u>Height of Center (ARP)</u>	<u>Power (ERPd)</u>
Horizontal Polarization:	4	EPA REPORT	79.2 m	1.940 kW
Vertical Polarization:	4	EPA REPORT	79.2 m	1.940 kW



Station: K18AJ Frequency: 495.250 MHz Height of Observer (ARP): 2.0 Meters
Horizontal Polarization: No. of Elements Element Type Height of Center (ARP) Power (ERPd)
 12 UHF ELEMENT 91.0 m 49.000 kW



FACILITIES & COVERAGE CONTOURS

PROPOSED FM RADIO STATION

KALISPELL, MONTANA

Channel 292 106.3 MHz

Class A, Omnidirectional Antenna

HAAT = 174 Meters

TERRAIN AVG. = 1033 Meters AMSL

DISTANCE TO CONTOURS
F(50,50)

RAD. CENTER = 1207 Meters AMSL

AZIMUTH (°True)	HAT (m)	HAAT (m)	ERP (kW)	ERP (dBk)	70 dBu (km)	60 dBu (km)
0	927	281	1.94	2.88	20.4	35.2
45	910	298	1.94	2.88	21.0	36.1
90	886	321	1.94	2.88	21.9	37.5
135	894	313	1.94	2.88	21.6	37.0
180†	1325	-118	1.94	2.88	6.7	12.0
225	1169	38	1.94	2.88	7.5	13.5
270	1131	76	1.94	2.88	10.7	19.1
315	1024	183	1.94	2.88	16.6	28.9
* 23	908	299	1.94	2.88	21.1	36.2

† - Contour computed using 30 m per §73.313(e).

* - Extra radial, not included in average.

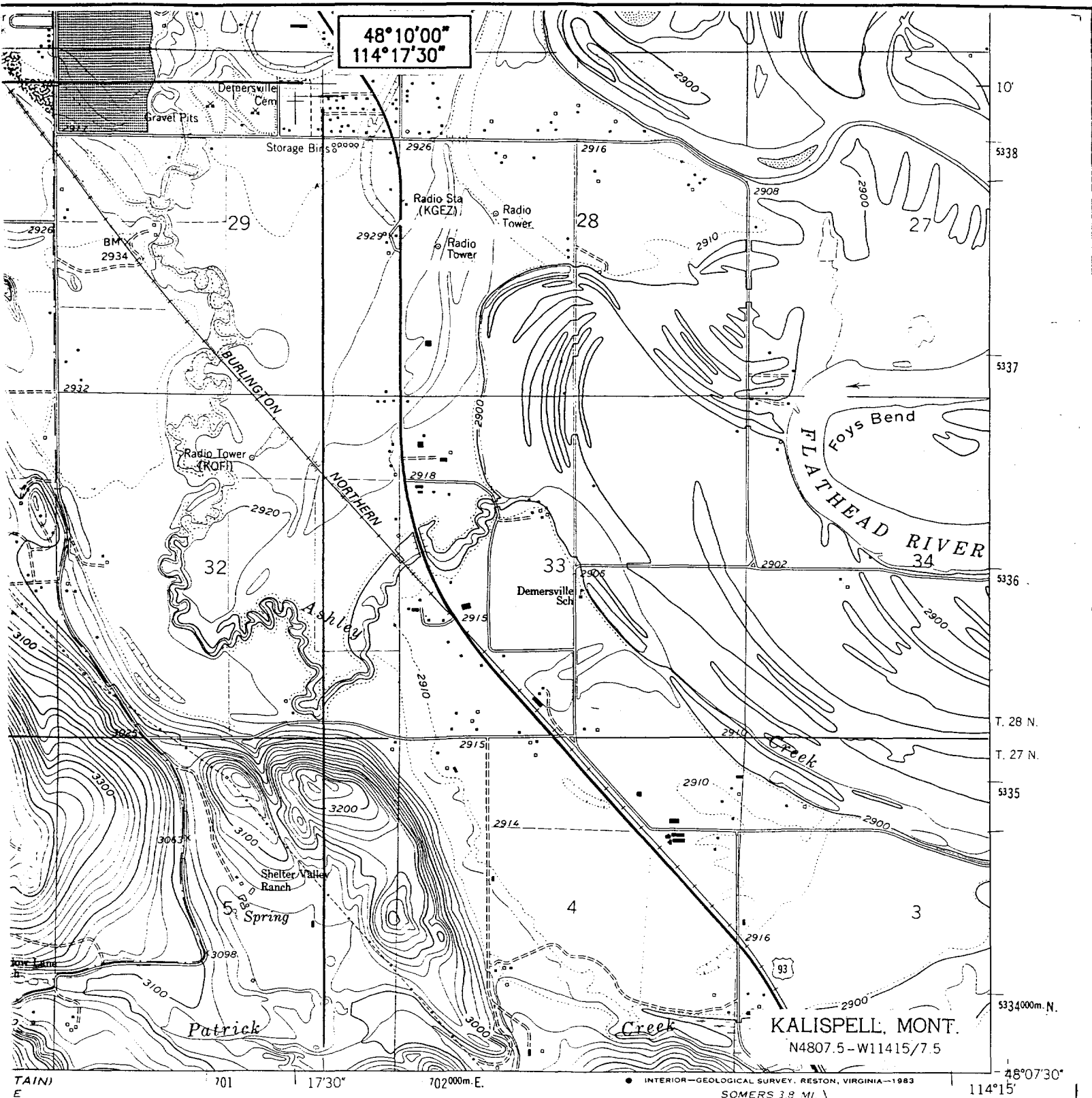
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**EXHIBIT VB-5
COPY OF FAA FORM**

DO NOT REMOVE CARBONS

Form Approved OMB No. 2120-0001

US Department of Transportation Federal Aviation Administration		NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION		Aeronautical Study Number	
1. Nature of Proposal A. Type <input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration B. Class <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary (Duration _____ months) C. Work Schedule Dates Beginning <u>JUN 1991</u> End <u>IN 6 MONTHS</u>			2. Complete Description of Structure A. Include effective radiated power and assigned frequency of all existing, proposed or modified AM, FM, or TV broadcast stations utilizing this structure B. Include size and configuration of power transmission lines and their supporting towers in the vicinity of FAA facilities and public airports C. Include information showing site orientation, dimensions and construction materials of the proposed structure CH 292A FM STATION 1.94 KW ERP KPAX(TV) TRANSLATOR: KI8AJ UNIFORM CROSS SECTIONAL GUYED TOWER (SEE ATTACHMENT) <i>(if more space is required, continue on a separate sheet.)</i>		
3A. Name and address of individual, company, corporation, etc. proposing the construction or alteration. <i>(Number, Street, City, State and Zip Code)</i> (406) <u>752-2600</u> area code Telephone Number TO PAUL DOOLITTLE C/O KGEZ PO BOX 169 KALISPELL, MT 59903			3B. Name, address and telephone number of proponent's representative if different than 3 above. HATFIELD & DAWSON 4226 6TH AVE NW SEATTLE, WA 98107 (206) 783-9151		
4. Location of Structure A. Coordinates <i>(To nearest second)</i> 48° 09' 58" N 114° 19' 51" W Latitude Longitude B. Nearest City, Town and State KALISPELL (1) Distance to 4B 2.3 (CITY CENTER) Miles (2) Direction to 4B 23° TRUE C. Name of nearest airport, heliport, flightpark, or seaplane base KALISPELL CITY (1) Distance from structure to nearest point of nearest runway 1.5 MILES (2) Direction from structure to airport 60° TRUE					
5. Height and Elevation <i>(Complete to the nearest foot)</i> A. Elevation of site above mean sea level 3700' B. Height of Structure including all appurtenances and lighting <i>(if any)</i> above ground, or water if so situated 320' C. Overall height above mean sea level (A + B) 4020'					
6. Description of location of site with respect to highways, streets, airports, prominent terrain features, existing structures, etc. Attach a U.S. Geological Survey quadrangle map or equivalent showing the relationship of construction site to nearest airport(s). <i>(if more space is required, continue on a separate sheet of paper and attach to this notice.)</i> (SEE ATTACHMENT)					
<p><small>Notice is required by Part 77 of the Federal Aviation Regulations (14 C.F.R. Part 77) pursuant to Section 1101 of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1101). Persons who knowingly and willingly violate the Notice requirements of Part 77 are subject to a fine (criminal penalty) of not more than \$500 for the first offense and not more than \$2,000 for subsequent offenses, pursuant to Section 902(a) of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1472(a)).</small></p>					
I HEREBY CERTIFY that all of the above statements made by me are true, complete, and correct to the best of my knowledge. In addition, I agree to obstruction mark and/or light the structure in accordance with established marking & lighting standards if necessary.					
Date 9/6/91		Typed Name/Title of Person Filing Notice L.S.C. ENSLOW/STAFF ENGINEER		Signature 	
<div style="display: flex; justify-content: space-between;"> <div> FOR FAA USE ONLY </div> <div> FAA will either return this form or issue a separate acknowledgement. </div> </div> <div style="display: flex;"> <div style="flex: 1;"> The Proposal: <input type="checkbox"/> Does not require a notice to FAA. <input type="checkbox"/> Is not identified as an obstruction under any standard of FAR, Part 77, Subpart C, and would not be a hazard to air navigation. <input type="checkbox"/> Is identified as an obstruction under the standards of FAR, Part 77, Subpart C, but would not be a hazard to air navigation. <input type="checkbox"/> Should be obstruction <input type="checkbox"/> MARKED, lighted per FAA Advisory Circular 70/7460-1, Chapter(s) _____ <input type="checkbox"/> Obstruction marking and lighting are not necessary. </div> <div style="flex: 1;"> Supplemental Notice of Construction FAA Form 7460-2 is required any time the project is abandoned, or <input type="checkbox"/> At least 48 hours before the start of construction. <input type="checkbox"/> Within five days after the construction reaches its greatest height. This determination expires on _____ unless: (a) extended, revised or terminated by the issuing office; (b) the construction is subject to the licensing authority of the Federal Communications Commission and an application for a construction permit is made to the FCC on or before the above expiration date. In such case the determination expires on the date prescribed by the FCC for completion of construction, or on the date the FCC denies the application. NOTE: Request for extension of the effective period of this determination must be postmarked or delivered to the issuing office at least 15 days prior to the expiration date. If the structure is subject to the licensing authority of the FCC, a copy of this determination will be sent to that Agency. </div> </div>					
Remarks:					
Issued In		Signature		Date	



SCALE 1:24,000

0 KILOMETERS

1

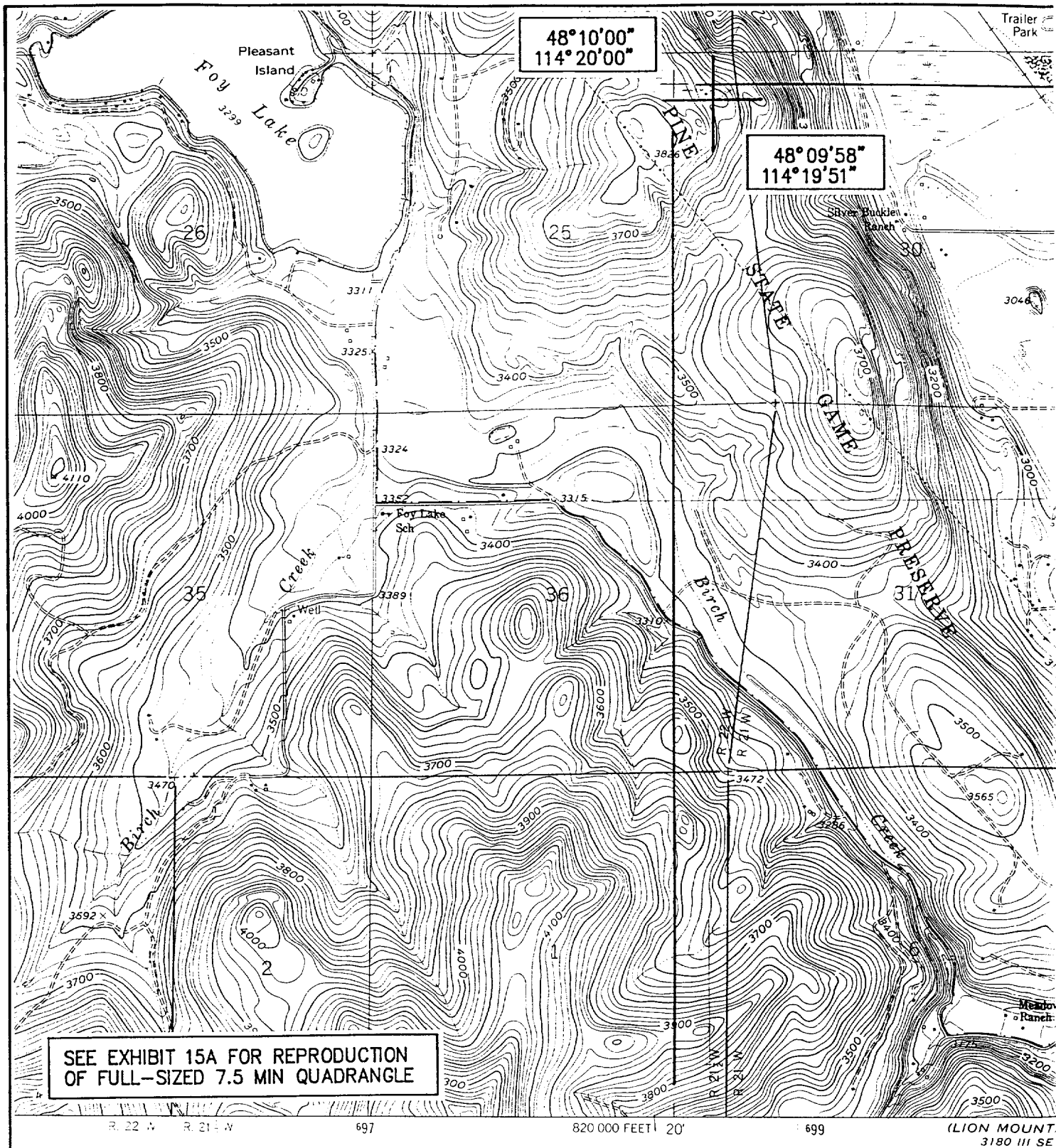
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3

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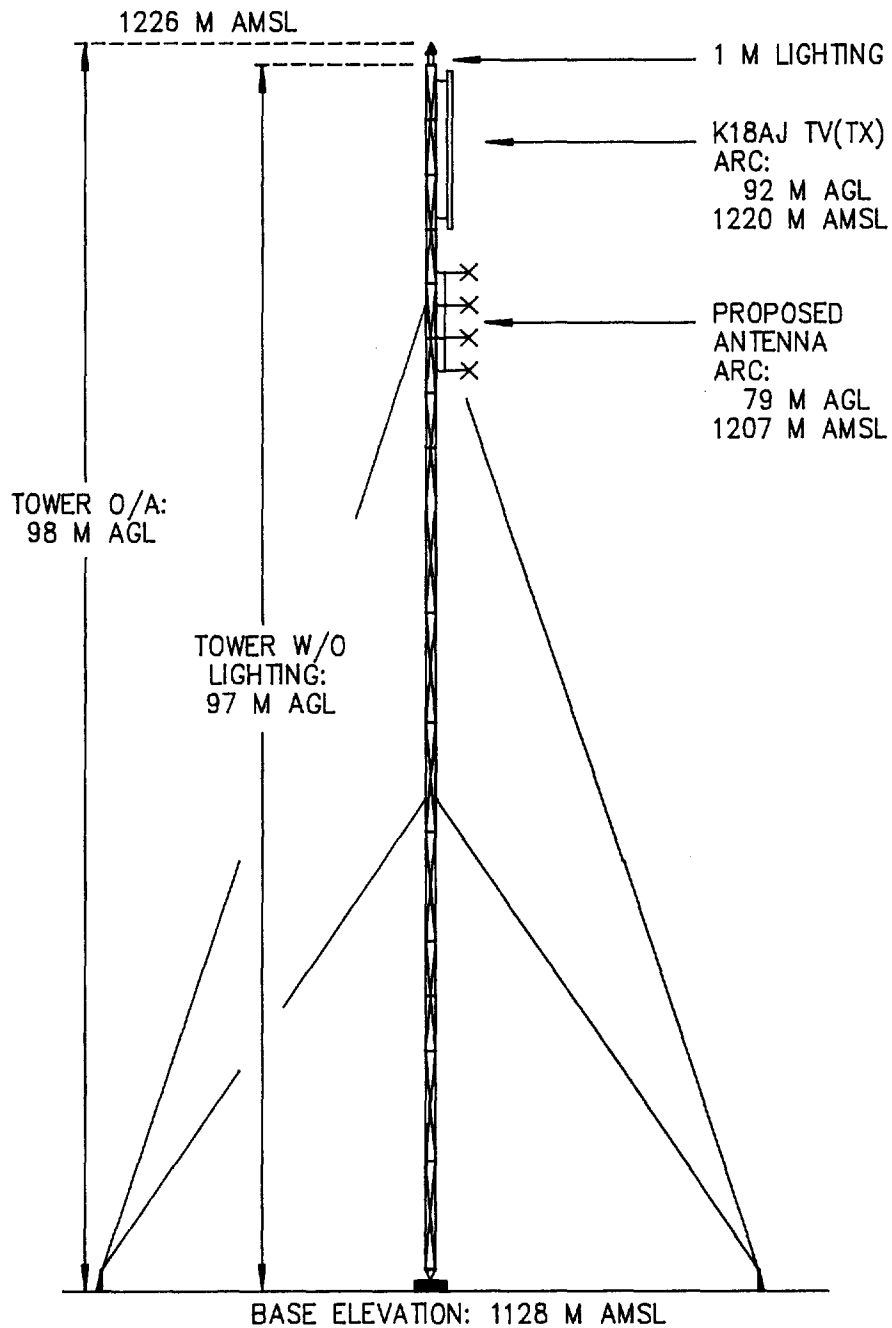
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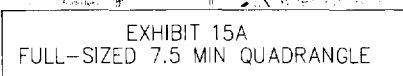
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EXHIBIT VB-15
TRANSMITTER SITE MAP
PROPOSED FM KALISPELL, MT 9/

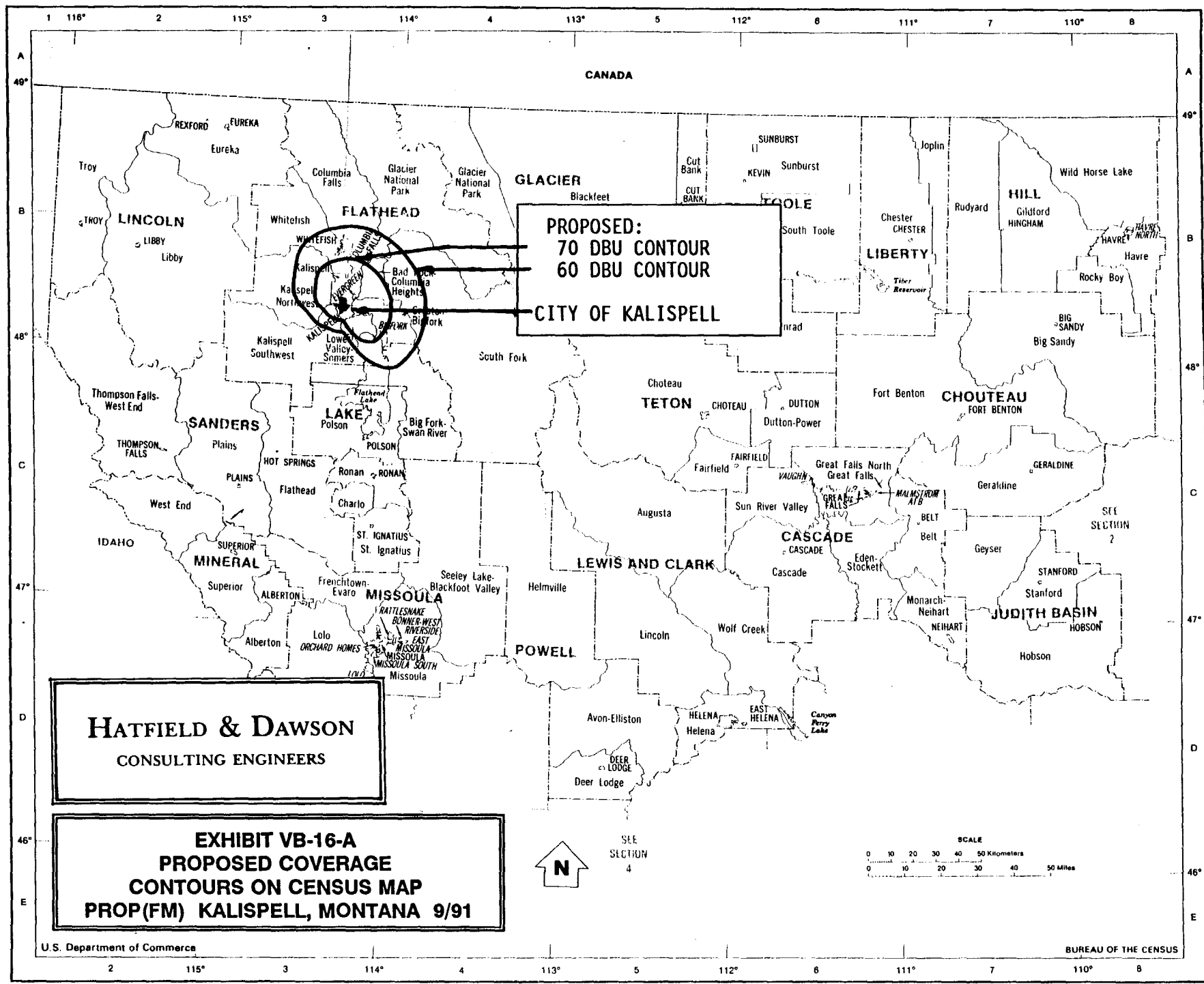


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CONSULTING ENGINEERS

EXHIBIT VB-8
VERTICAL PLAN SKETCH
PROPOSED FM KALISPELL, MT 9/91



Counties, National Park (Part), County Subdivisions (Census County Divisions), and Places—Section 1



NUMBER OF INHABITANTS

MONTANA 28-23

Section V-B - FM BROADCAST ENGINEERING DATA	For Commission Use Only	
	File No.	_____
	ASB Referral Date	_____
	Referred by	_____

Name of Applicant
SKYLINE BROADCASTERS, INC.

Call Letters (if issued) NEW	Is this application being filed in response to a window? <u>X</u> Yes ___ No If Yes, specify closing date: SEPTEMBER 26, 1991
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Purpose of Application (Check appropriate boxes)

- | | |
|---|--|
| <u>X</u> Construct a new (main) facility | ___ Construct a new auxiliary facility |
| ___ Modify existing construction permit for main facility | ___ Modify existing construction permit for auxiliary facility |
| ___ Modify licensed main facility | ___ Modify licensed auxiliary facility |

If purpose is to modify, indicate below the nature of change(s) and specify the file number(s) of the authorizations affected.

- | | |
|--|-------------------------------|
| ___ Antenna supporting-structure height | ___ Effective radiated power |
| ___ Antenna height above average terrain | ___ Frequency |
| ___ Antenna location | ___ Class |
| ___ Main studio location | ___ Other (summarize briefly) |

File Number(s) _____

1. Allocation:

Channel No.	Principal community to be served:			Class (Check only one below)
292	City	County	State	<u>X</u> A ___ B1 ___ B ___ C3
	KALISPELL	FLATHEAD	MT	___ C2 ___ C1 ___ C

2. Exact location of antenna.

- (a) Specify address, city, county, and state, If no address, specify distance and bearing relative to the nearest town or landmark.
3.7 KILOMETERS SOUTHWEST OF CENTRAL KALISPELL AT 203° TRUE.
- (b) Geographical coordinates (to nearest second). If mounted on element of an AM array, specify coordinates of center of array. Otherwise, specify tower location. Specify South Latitude or East Longitude where applicable; otherwise, North Latitude or West Longitude will be presumed.

Latitude	48°	09'	58"	Longitude	114°	19'	51"
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3. Is the supporting structure the same as that of another station(s) or proposed in another pending application(s)? X Yes ___ No

If Yes, give call letter(s) or file number(s) or both K18AJ TRANSLATOR FOR KPAX(TV)

If proposal involves a change in height of existing structure, specify existing height above ground level, including antenna, all other appurtenances, and lighting, if any.

DNA

Section V-B - FM BROADCAST ENGINEERING DATA (Page 2)

4. Does the application propose to correct previous site coordinates? ___ Yes X No
If Yes, list old coordinates.

Latitude . ' "	Longitude . ' "
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5. Has the FAA been notified of the proposed construction? X Yes ___ No

If Yes, give date and office where notice was filed and attach as an Exhibit a copy of FAA determination, if available.

Exhibit No. VB-5

Date 9/6/91 Office where filed NORTHWEST MOUNTAIN REGIONAL OFFICE

6. List all landing areas within 8 km of antenna site. Specify distance and bearing from structure to the nearest point of the nearest runway.

Landing Area	Distance (km)	Bearing (degrees True)
(a) <u>KALISPELL CITY AIRPORT</u>	<u>2.4</u>	<u>60°</u>
(b) _____	_____	_____

7. (a) Elevation: (to the nearest meter)

(1) of site above mean sea level;	<u>1128</u> meters
(2) of the top of supporting structure above ground (including antenna, all other appurtenances, and lighting, if any); and	<u>98</u> meters
(3) of the top of supporting structure above mean sea level [(a)(1) + (a)(2)]	<u>1226</u> meters

- (b) Height of radiation center: (to the nearest meter) H = Horizontal; V = Vertical

(1) above ground	<u>79</u> meters (H)
	<u>79</u> meters (V)
(2) above mean sea level [(a)(1) + (b)(1)]	<u>1207</u> meters (H)
	<u>1207</u> meters (V)
(3) above average terrain	<u>174</u> meters (H)
	<u>174</u> meters (V)

8. Attach as an Exhibit sketch(es) of the supporting structure, labelling all elevations required in Question 7 above, except item 7(b)(3). If mounted on an AM directional-array element, specify heights and orientations of all array towers as well as location of FM radiator.

Exhibit No. VB-8

9. Effective Radiated Power:

(a) ERP in the horizontal plane 1.94 kW (H*) 1.94 kW (V*)

- (b) Is beam tilt proposed? ___ Yes X No

If Yes, specify maximum ERP in the plane of the tilted beam, and attach as an Exhibit a vertical elevational plot of radiated field.

Exhibit No. DNA

_____ kW (H*) _____ kW (V*)

* Polarization

10. Is a directional antenna proposed?

☐ Yes ☒ No

If Yes, attach as an Exhibit a statement with all data specified in 47 C.F.R. Section 73.316 including plot(s) and tabulations of the relative field.

Exhibit No.
DNA

11. Will the proposed facility satisfy the requirements of 47 C.F.R. Sections 73.315(a) and (b)?

☒ Yes ☐ No

If No, attach as an Exhibit a request for waiver and justification therefor, including amounts and percentages of population and area that will not receive 3.16 mV/m service.

Exhibit No.
DNA

12. Will the main studio be within the protected 3.16 mV/m field strength contour of this proposal?

☒ Yes ☐ No

If No, attach as an Exhibit justification pursuant to 47 C.F.R. Section 73.1125.

Exhibit No.
DNA

13. (a) Does the proposed facility satisfy the requirements of 47 C.F.R. Section 73.207?

☒ Yes ☐ No

(b) If the answer to (a) is No does 47 C.F.R. Section 73.213 apply?

☐ Yes ☐ No

(c) If the answer to (b) is Yes, attach as an Exhibit a justification, including a summary of any previous waivers.

Exhibit No.
DNA

(d) If the answer to (a) is No and the answer to (b) is No, attach as an Exhibit a statement describing the short spacing(s) and how it or they arose.

Exhibit No.
DNA

(e) If authorization pursuant to 47 C.F.R. Section 73.215 is requested, attach as an Exhibit a complete engineering study to establish the lack of prohibited overlap of contours involving affected stations. The engineering study must include the following:

Exhibit No.
DNA

(1) Protected and interfering contours, in all directions (360°), for the proposed operation

(2) Protected and interfering contours, over pertinent arcs, of all short-spaced assignments, applications, and allotments, including a plot showing each transmitter location, with identifying call letters or file numbers, and indication of whether facility is operating or proposed. For vacant allotments, use the reference coordinates as the transmitter location.

(3) When necessary to show more detail, an additional allocation study utilizing a map with a larger scale to clearly show prohibited overlap will not occur.

(4) A scale of kilometers and properly labeled longitude and latitude lines, shown across the entire exhibit(s). Sufficient lines should be shown so that the location of the sites may be verified.

(5) The official title(s) of the map(s) used in the exhibit(s).

14. Are there: (a) within 60 meters of the proposed antenna, any proposed or authorized FM or TV transmitters, or any nonbroadcast (except citizens band or amateur) radio stations; or (b) within the blanketing contour, any established commercial or government receiving stations, cable head-end facilities, or populated areas; or (c) within ten (10) kilometers of the proposed antenna, any proposed or authorized FM or TV transmitters which may produce receiver-induced intermodulation interference?

☒ Yes ☐ No

If Yes, attach as an Exhibit a description of any expected, undesired effects of operations and remedial steps to be pursued if necessary, and a statement accepting full responsibility for the elimination of any objectionable interference (including that caused by receiver-induced or other types of modulation) to facilities in existence or authorized or to radio receivers in use prior to grant of this application. (See 47 C.F.R. Sections 73.315(b), 73.316(e) and 73.318.)

Exhibit No.
ENG. RPT.

15. Attach as an Exhibit a 7.5 minute series U.S. Geological Survey topographic quadrangle map that shows clearly, legibly, and accurately, the location of the proposed transmitting antenna. This map must comply with the requirements set forth in Instruction V. The map must further clearly and legibly display the original printed contour lines and data as well as latitude and longitude markings, and must bear a scale of distance in kilometers.

Exhibit No.
VB-15,15A

16. Attach as an Exhibit (name the source) a map which shows clearly, legibly and accurately, and with the original printed latitude and longitude markings and a scale of distance in kilometers:

Exhibit No.
VB-16,16A

- (a) the proposed transmitter location, and the radials along which profile graphs have been prepared;
- (b) the 3.16 mV/m and 1.0 mV/m predicted contours; and
- (c) the legal boundaries of the principal community to be served.

17. Specify area in square kilometers (1 sq. mi. = 2.59 sq. km.) and population (latest census) within the predicted 1 mV/m contour.

Area 2644 sq. km. Population 40,822

18. For an application involving an auxiliary facility only, attach as an Exhibit a map (Sectional Aeronautical Chart or equivalent) that shows clearly, legibly, and accurately, and with latitude and longitude markings and a scale of distance in kilometers:

Exhibit No.
DNA

- (a) the proposed auxiliary 1 mV/m contour; and
- (b) the 1 mV/m contour of the licensed main facility for which the applied-for facility will be auxiliary. Also specify the file number of the license.

19. Terrain and coverage data (to be calculated in accordance with 47 C.F.R. Section 73.313)

Source of terrain data: (check only one box below)

☒ Linearly interpolated
30-second database
(Source: NGDC)

☐ 7.5 minute topographic map

☐ Other (briefly summarize)

Radial bearing (degrees True)	Height of radiation center above average elevation of radial from 3 to 16 km (meters)	Predicted Distances	
		To 3.16 mV/m contour (kilometers)	To 1.0 mV/m contour (kilometers)
*			
0	SEE ENGINEERING REPORT		
45			
90			
135			
180			
225			
270			
315			

* Radial through principal community, if not one of the major radials. This radial should NOT be included in the calculation of HAAT.

20. Environmental Statement (See 47 C.F.R. Section 1.1301 et seq.)

Would a Commission grant of this application come within Section 1.1307 of the FCC Rules, such that it may have a significant environmental impact?

☐ Yes ☒ No

If you answer Yes, submit as an Exhibit an Environmental Assessment required by Section 1.1311.

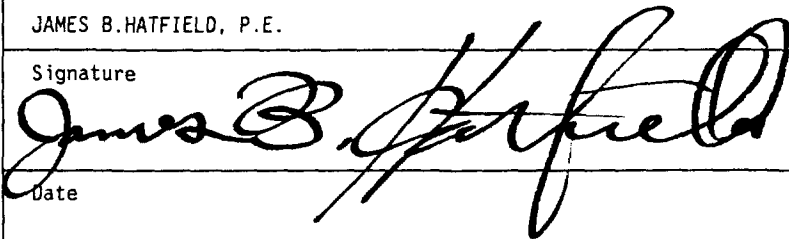
Exhibit No.

If No, explain briefly why not.

THE STRUCTURE PROPOSED IN THIS APPLICATION IS NOT LOCATED IN AN ENVIRONMENTALLY SENSITIVE AREA AS DEFINED IN SECTION 1.1307 OF THE FCC RULES. SEE ENGINEERING STATEMENT FOR NIER CALCULATIONS.

CERTIFICATION

I certify that I have prepared this Section of this application on behalf of the applicant, and that after such preparation, I have read the foregoing and have found it to be accurate and true to the best of my knowledge and belief.

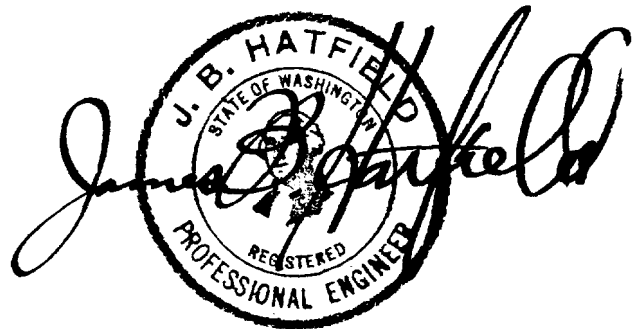
Name	Relationship to Applicant (e.g. Consulting Engineer)
JAMES B. HATFIELD, P.E.	CONSULTING ENGINEER
Signature	Address (Include ZIP Code)
	4226 6TH AVE. N.W. SEATTLE, WA 98107
Date	Telephone No. (Include Area Code)
SEPTEMBER 18, 1991	(206) 783-9151

6. Statement of Engineer

This Engineering Report, which is part of an application for a new FM broadcast station at Kalispell, Montana, by Skyline Broadcasters, Inc., has been prepared under my direct supervision. All representations contained herein are true to the best of my knowledge. I am an experienced radio engineer whose qualifications are a matter of record with the Federal Communications Commission. I am a partner in the firm of Hatfield and Dawson Consulting Engineers and am Registered as a Professional Engineer in the State of Washington.

Signed this 18th day of September, 1991.

James B. Hatfield, P.E.



Hatfield & Dawson Consulting Engineers